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U. S. DEPARTMENT OF AGRICULTURE  
Office of Marketing Services  
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INSPECTION OF PRODUCTS  
MEMORANDUM A

July 21, 1945

To: All Veterinary Inspectors

From: P. J. Brandly, Poultry Pathologist  
Dairy and Poultry Branch

Subject: Tuberculosis in Turkeys

PJ Brandly

This memo is being issued to report recent observations concerning tuberculosis in turkeys.

Tuberculosis in turkeys has been reported by a number of investigators and the gross appearance of the lesions has been described as being similar to the lesions of tuberculosis in chickens. There is on display in the Pathological Division, B.A.I. Museum a specimen of tuberculosis in the spleen of a turkey. On gross examination these lesions appear identical with those usually found in chickens.

My own experience with turkey inspection is limited to those raised in the eastern United States and in turkeys from that area I have never diagnosed tuberculosis. However, last fall a consignment of dressed Argentine turkeys, slaughtered in South America were eviscerated in Omaha. Some of these birds had lesions which were different from any I had ever seen. They occurred in the lungs, the liver, the spleen, on the mesentery, and in the bone marrow, and were perfectly spherical. In individual birds they were the same size except for the bone marrow lesions, which were smaller. In different birds the size of the lesions varied from 4 to 15 mm. in diameter.

One of the supervisors in the poultry inspection service said that he had seen such lesions before and that the laboratory diagnosis was tuberculosis. Histological examination of the Argentine turkey lesions showed a necrotic center surrounded by giant cells, epithelioid cells, and a dense connective tissue capsule. Numerous acid-fast organisms were present in the necrotic center. We were unable to find any daughter or secondary tubercles in the material examined.

Tuberculosis in chickens is so regularly characterized by the development of secondary tubercles around the primary lesion that on macroscopic examination we look for these secondary tubercles and the resulting irregularly shaped lesion, in order to aid in the diagnosis of tuberculosis.

We concluded that the turkeys under consideration were able to prevent the escape of the tuberculosis organisms from the primary lesion and for that reason the turkey lesions differed from those usually found in chickens. There is a question as to whether or not all turkeys have this resistance to the spread of the tuberculosis organisms from the primary lesion. As a result of these observations some inspectors in the field were asked to send in turkey specimens which they thought were tuberculous.

So far, 24 specimens suspected of tuberculosis have been received from the East and Middle West, and examined, but in no instance did the laboratory findings confirm the gross diagnosis. I also thought some of them certainly were tuberculosis lesions. These lesions, confined usually to the liver, were of a conglomerate nature. Macroscopically they were characterized by a great amount of connective tissue containing numerous yellow necrotic centers. They varied in size from 10 to 40 mm. in diameter and usually protruded slightly above the liver surface and extended deep into the liver substance, occasionally completely through the liver. Histologically they were typical granulomatous processes containing multiple areas of necrosis composed of a deeply staining hyaline material and pycnotic nuclei. These necrotic areas were surrounded by giant cells, mononuclear cells, and connective tissue. In no case were acid-fast organisms found in the lesions.

This material was from turkeys which had been slaughtered, New York dressed, frozen, stored and defrosted prior to eviscerating. Despite the fact that the presence of parasites could not be demonstrated we feel that these were old lesions of histomoniasis or possibly trichomoniasis. The high incidence of these lesions in some flocks is of interest, reports of from 40 to 60 percent in a lot having been received. As yet we have not had an opportunity to study turkeys from the West coast that have been condemned for tuberculosis. The problem, however, is being studied further and a later report will be made.

Your cooperation and aid in determining the incidence of tuberculosis in turkeys and the types of lesions found will be appreciated. Lesions of tuberculosis in pheasants frequently appear as soft whitish tumorous masses and because of the close relationship of turkeys and pheasants similar lesions in turkeys may be tuberculous.

Please send in any lesions which you feel may have some connection with this problem. The formalin fixed material with the case report is all that is needed.